

Compatibility Determination

Use: Gas and Oil Exploration

Primary Use: Seismic 2D survey on selected Service lands adjacent to Doyon and/or Tribal Lands (see attached map for refuge lands adjacent to Dinyee or Doyon properties)

Supporting Uses: helicopter access for transporting crews and equipment; snowmachine use for ground transportation; heliportable drilling equipment; seismic geophones and recording cable, 2 kg explosive charges

Refuge Name: Yukon Flats National Wildlife Refuge

Establishing and Acquisition Authority:

The Yukon Flats National Wildlife Refuge (Refuge) was established on December 2, 1980 when Congress passed the Alaska National Interest Lands Conservation Act (ANILCA).

Refuge Purposes:

Section 302 of ANILCA sets forth purposes for which the Refuge was established and shall be managed to include:

- (i) to conserve fish and wildlife populations and habitats in their natural diversity including, but not limited to
- (ii) to fulfill the international treaty obligations of the United States with respect to fish and wildlife and their habitats;
- (iii) to provide, in a manner consistent with purposes set forth in subparagraphs (i) and (ii), the opportunity for continued subsistence uses by local residents; and
- (iv) to ensure, to the maximum extent practicable and in a manner consistent with the purposes set forth in subparagraph (i), water quality and necessary water quantity within the refuge.

National Wildlife Refuge System Mission:

The mission of the System is to administer a national network of lands and waters for the conservation, management, and where appropriate, restoration of the fish, wildlife, and plant resources and their habitats within the United States for the benefit of present and future generations of Americans. (National Wildlife Refuge System Administration Act of 1966, as amended [16 U.S.C. 668dd-668ee]).

Description of Use: The purpose of the proposed use is to collect geophysical data to support the analysis of oil and gas potential on private lands owned by Doyon Limited, Inc. (Doyon) and Dinyee Corporation (Dinyee). Seismic programs are conducted along transects over sedimentary basins with favorable structure for oil and gas reserves. It is important to gather the data along a continuous line for accurate results and the Refuge lands lie between the areas of interest. Access is requested to allow continuity for accurate data collection. All data will be provided to the Service to be used as needed.

Doyon will contract CGG VERITAS Land, Inc., to conduct the seismic work during the winter (March to April) of 2010.

The majority (72 percent) of the project will be conducted on Doyon- and Dinyee-owned lands. However, small portions of Refuge lands are adjacent to or surrounded by Doyon and Dinyee lands that are being evaluated for oil and gas potential. Lines will form a grid pattern across the area of interest, and extend outside the boundaries of Doyon and Dinyee lands in three instances; each line will not extend into Refuge lands more than approximately 5 miles. Three lines also will cross Refuge lands surrounded by Doyon/Dinyee lands and will not exceed approximately 6 miles each. Total length of transect lines on Refuge lands are not to exceed 27 linear miles. A base camp will be established on Dinyee and/or Doyon lands. No equipment, fuel storage, or recording equipment shelters will be on Refuge lands.

The drilling equipment will be transported to the base camp/staging area by helicopter or airplane. Bags of geophones and cables will be prepared at the base and transported by slings to the survey lines using helicopter. Drills and compressors also will be transported to drilling sites along the survey line by helicopter sling. The survey crew will travel the survey line by snowmachine if sufficient snow cover exists (6 inches), if not, then by snowshoes. The survey crews will use roving RTK (GPS) units equipped with telemetry radio and 12 channel GPS cards to move along pre-chained lines and collect data from each receiver and shot point location. All drilling will be accomplished with six helicopter portable drills. The six drills will be run on a 14-hour shift per day and average 10 holes per day. Two kg of geoprime with seis smart cap detonation will be used as explosive devices. The smart cap system brings a new level of safety to drilling and recording operations by allowing the hole to be detonated only with a designated blaster. Historic places have been identified and will be avoided during survey activities.

Availability of Resources: The staff of the Refuge will survey the project a minimum of 2-3 times a week by aerial reconnaissance. A ground inspection will be conducted as necessary. The availability of Refuge resources is limited but oversight by staff is considered essential to ensure adequate communication and compliance to protect Refuge resources.

Anticipated Impacts of the Use: The 2D seismic survey program is anticipated to have minimal impact to the environment. The surveys will be conducted in the winter during frozen soil and adequate snow depth conditions. Access to Refuge lands will be by helicopter and snowmachine. The seismic geophones and recording cable will be laid out on the surface by workers on foot or by snowmachine and will not require tree cutting, brushing, or mulching. Disturbance associated with the action will be limited to three inch diameter shot holes to a depth of 25 feet. Shot holes will be drilled at a spacing of 16 to 20 per mile and will result in 440 and 550 shot holes on Refuge lands (1560-1950 shot holes on all lands). Each shot hole will be backfilled with the cuttings leaving no permanent surface disturbance. The drilling apparatus will be transported by helicopter and placed on cribbing on the frozen ground resulting in minimal surface disturbance. The drilling apparatus has a footprint of about 50 ft² and will advance the boring to the required depth without the use of drilling fluid in most soil conditions. However, in soils with low cohesiveness, small amounts of drilling additive (see MSDS sheets) may be placed into the boring to stabilize the hole wall for placement of explosives. The additive will be transported in sealed five gallon containers and used only as needed. The combined total surface disturbance for all shot holes will be approximately 30 ft² or less than 1/100th an acre. Additionally, explosives will not be detonated within, beneath, or in close proximity to fish bearing waters and will be conducted in accordance with permits received from the Alaska Department of Fish and Game. Therefore no direct impacts to fish are anticipated. Direct impacts to migratory birds will also be minimized because the program activities will occur during late winter outside of the prime migration window of most species. However, it should be noted that raptors migrate to the Yukon Flats in mid- to late-April and waterfowl species, such as mallard and northern pintail, arrive in late April. Short-term, localized disturbance may occur to wildlife (e.g. wolf, moose, and wolverines) in the area of the program activities. For example, wildlife may scatter and be displaced during detonation of explosives or when helicopters are low to the ground. However, any displacement would likely be short-term and on a localized scale.

Stream and river crossing procedures (see Operations Plan Appendix H) will be implemented to ensure that minimal impact will occur to water bodies and banks. Existing crossings will be used to the extent practical.

It is expected that the 2D seismic survey program will result in minimal impacts on Service interests and Refuge purposes.

Public Review and Comment:

This compatibility determination was subject to a 14-day public comment period. A public notice was published in the Legal Notices section of the Fairbanks Daily News Miner on March 8, 2010.

The applicant, Doyon, has conducted outreach with Stevens Village, the closest habitation to the proposed activity. The Stevens Village community and Tribal Council confirmed their support of the project by passing a resolution of support dated November 9, 2009. The Service contacted the Stevens Village Council on February 10, 2010 and confirmed its support for the project

Refuge Determination (check one below):

- Use is Not Compatible
- Use is Compatible with Following Stipulations

Stipulations Necessary to Ensure Compatibility:

- Timing: All activities on Refuge land will occur between 1 March and 30 April 2010. Survey lines on Refuge land will not exceed 27 miles in total; no individual line will exceed approximately 6 miles.
- No motorized vehicles will be used on Refuge lands except for snowmachines if sufficient snow cover exists. Snow depth must be a minimum of 6 inches to adequately protect ground surface.
- The use of helicopters is authorized with the following understanding:
 - a. Landings on the Refuge are prohibited except in emergencies.
 - b. All transportation of seismic equipment must be completed by helicopter slings.
 - c. The recreational use of helicopters is prohibited.
 - d. Clearing of vegetation for landing or takeoff is not allowed.
 - e. Fuel caches are not permitted on the Refuge.
 - f. All helicopter operations shall comply with United States Department of Transportation, 14 CFR.
- Staging of materials and equipment will not be allowed on the Refuge.
- Seismic charges shall not be detonated within 100 feet, beneath, or adjacent to marine, estuarine, or fresh waters that support fisheries at the time of the project.
- The proposed use shall be conducted such that operations will not unduly damage any wildlife habitat or wildlife resource or interfere with wildlife concentrations. Wildlife will not knowingly be harassed or approached closely enough to disrupt the animal's activity or to endanger human life.
- No new roads or trails may be constructed. Clearing routes of travel, felling or cutting trees, or blazing trails is not allowed
- The applicant will fill, plug, and cover all holes. Should artesian water develop from any such drill site, the applicant will contain and properly plug and abandon the well as may be appropriate under existing regulations.

